

# Adaptation Capacity Building Recommendations for Discussion at Dec 7 SLRAC Meeting

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*\*The following recommendations received numerous “disagree” or “not enough info” votes on the SLRAC Survey. Because of their relative low score, these recommendations have been selected to begin SLRAC discussions that will continue in January.*

*Each recommendation below contains the raw description from the Focus Group sessions as well as comments received on the Survey and suggestions from DCP staff.*

*Each recommendation has retained its number from the survey for easy reference.*

## Improve Communication and Coordination between State, Federal, Local and Regional Partners to Streamline Sea Level Rise Adaptation Efforts

### **3--Develop a Federal Highways Administration (FHWA) Climate Change Framework (Transportation)**

*The FHWA has developed a multi-mode approach addressing climate change. Applying this multi-mode approach across DelDOT can increase the ability for coordination between Maryland and Delaware to better address sea level rise.*

#### **a. Survey Comments**

- i. I don't think the discussion on this topic was captured accurately in the draft adaptive capacity recommendations. I think the discussion at the workshop centered on having FHWA provide leadership in bringing the coastal state DOTs together to set design policy, develop coastal infrastructure management strategies, and define funding eligibility. This could be a task force style committee or a conference on the topic.
- ii. why would a state develop a federal framework?
- iii. I don't know what a “multi-mode approach” means. More explanation is needed.

#### **b. DCP Suggestions**

- i. Reword to “Encourage FHWA to provide leadership and technical assistance to state Transportation Departments for sea level rise related design policy, coastal infrastructure management strategies and funding eligibility”
- ii. Include a bit more background on the federal/state role

## Provide increased regulatory flexibility for adaptation and improve consistency between regulatory agency decisions

1. **Create a “Coastal Road” designation (Transportation)** - *Designate roads in areas that are to be affected by sea level rise as coastal roads. Designating these roads would change the amount of maintenance required for each of these roads, possibly leading to the eventual abandonment of a road. New roads that may acquire this designation should include some type of consideration for avoidance of areas based on regulation due to the likelihood for flooding and inundation in that area.*
  - a. Survey Comments
    - i. Construction of new highways, roads, and bridges should, where feasible, be located outside of areas at risk for flooding/inundation within the life span of the project (i.e., if a road is expected to last 50 years, it should not be constructed in an area that will be inundated in less than 50 years, unless it is elevated above the expected inundation level). This should be implemented in the planning process as soon as feasible. Repairs to existing roads should take the likely date of future inundation into account. If existing roads are to be abandoned due to SLR issues, they should be deconstructed, the remains removed, and the land used for protection of natural resources, e.g., for buffer zones into which wetlands could migrate, or conversion to inundation-tolerant forests or agriculture.
    - ii. We discussed this at the workshop in the context that this had been proposed by some people, and it may work for a few roads, but there are practical reasons why we cannot wholesale change all the roadways' "classifications" ("designation" is not the term used in FHWA parlance). The practical reasons come down to the volume of traffic and other route options that may not exist. Just as it would be impossible to direct the Mississippi River through a small pipe, it would be impossible to direct a large volume of traffic down a narrow clam shell street. Roadway lane widths, the number of lanes, and the type of surface are dependent on the number of vehicles that use the road.
    - iii. what does this provide exactly?
  - b. DCP Suggestions
    - i. Provide additional background information, including what the road classification would entail as well as where it could be utilized (and not)
    - ii. Change term “designation” to “classification”

**3-- \*\*Allow connection of individual septic systems to community systems with excess capacity (Water & Wastewater)-** *Community systems, private treatment facilities, and satellite treatment facilities with excess capacity could be tapped into to connect nearby failing systems. This would allow systems failing due to sea level rise to connect to closest available capacity as an interim measure. Concurrently, there would be the need to restrict further development in areas vulnerable to sea level rise.*

a. Survey Comments

- i. May foster additional development in non-ideal locations
- ii. Who pays?
- iii. A funding source will be required due to the costs of extending long lines to individual remote area. A requirement to connect will be necessary to enable this to be implemented, once an area is declared as unable to get a replacement septic system

b. DCP Comments

- i. This recommendation is linked to Policies #11, and Funding #2 below
- ii. Need to provide background information about what is allowable today and how these situations are currently handled
- iii. Need to identify whether this recommendation was related to the State Strategies for Policy and Spending or Septic/Wastewater System regulations

**13 -Expand DNREC authority to acquire and/or protect areas identified as feasible and necessary for wetland migration (Land Preservation and habitat)** *By expanding the ability of the Department of Natural Resources and Environmental Control to regulate tidal wetlands to include lands adjacent to those wetlands that may allow wetland migration, the state can protect areas that may become future wetlands, thus preserving some of the flood protection and habitat value of these systems.*

a. Survey Comments

- i. Not sure we can yet identify with great certainty areas "feasible and necessary" but should explore for potential in future
- ii. Is eminent domain an option?
- iii. DNREC already has this authority under 7 Del. C., Ch. 75, Delaware Land Protection Act. We just need the funding!
- iv. This is dangerous politically. Suppose the land never gets "wet"? What is the DNREC jurisdiction?
- v. Strongly agree

b. DCP Comments

- i. From a DNREC perspective, new regulations would be difficult
- ii. Need to ID areas that may be important for wetlands migration
- iii. "Rolling easements" are a voluntary way to meet the intent of this recommendation

- iv. Tidal wetland protections in DE are based on lines drawn in 1980's; updating those lines more frequently may also be part of the solution or meet the intent of this recommendation.

## **Provide consistent and predictable policies for future growth, investment, and natural resource management.**

**6-- Conduct a legal review of Disinvestment and Abandonment (Land Use)** - *Several of the capacity building strategies discussed at this focus group centered around themes of retreating from publically maintained infrastructure and issues that could arise should homeowners retreat and abandon their structures. Before policy decisions regarding these issues can be made, a comprehensive review of the local, state and federal legal framework will be necessary.*

### **a. Survey Comments**

- i. Crucial - and happening at DelDOT.
- ii. Seek legislation transferring abandoned properties to the State, or at least giving the State a lien on them.

**7--Consider use of a statewide Transfer of Development (TDR) tool (Land Use)** *A TDR helps to direct future growth away from vulnerable areas by allowing for increased densities elsewhere. This could help to ensure future growth needs are met, but by utilizing land outside of potentially vulnerable areas. There was much discussion about this particular tool for increasing adaptive capacity and additional information would be needed about potential consequences for agricultural lands*

### **a. Survey Comments**

- iii. This is critically important. TDRs have had lots of conversation but not too much done about them. We ought to get moving on it. Dave Edgell is the state expert.

**11--\*\*Prioritize planning for unincorporated towns (Water & Wastewater)** *Unincorporated towns on the Bay Coast are most susceptible to sea level rise and have the least capacity to adapt. Planning efforts should prioritize these areas.*

### **a. Survey Comments**

- i. It would help mightily if each county had proper flood plain regulations with limited waiver possibilities.
- ii. Investigate the creation of special taxation districts, authorities, insurance funds, bond funds, or cooperatives to capitalize a revolving loan fund for adaptation/mitigation/retreat of individual facilities, and to cover public costs related to adaptation/mitigation/retreat of private facilities. Only those who contribute would be eligible to receive assistance. Assistance

funding should favor those who take action sooner rather than later and should be evaluated on a social need basis.

#### **14--Evaluate benefits/risks of allowing private impoundments (Land Preservation & habitat)**

*There may be interest from private citizens or waterfowl hunting enthusiasts to create impounded wetlands on privately owned land. This practice is currently not allowed, but given the vulnerabilities identified to the state's impoundments, providing similar alternatives at a smaller scale can provide beneficial habitat if impoundments are properly managed. An endowment should be required for funding any future maintenance. Automatic tide gates could aid in ensuring proper management. Conservation easements would provide permanent protections and direct management practices. Impacts to local hydrology, mosquito control, flooding and drainage issues and potential liabilities should be evaluated.*

##### **a. Survey Comments**

- i. Also terribly important. Then after the evaluation is done the state must speak with one voice. These folks in bayshore communities hear all different concepts from different state people.
- ii. I thought private impoundments are already allowed? Enlisting resourceful private interests into helping develop solutions like this will be good for political support

## **Increase Public Awareness of Sea Level Rise through Education, Outreach and Marketing**

*Each focus group discussed the need for educating the public about sea level rise as a way to assist in gaining public support for adaptation measures that were discussed as well as a way for making better decisions overall. Adapting to sea level rise may initially concern many people and people may not fully understand the long-term implications of sea level rise. Making a consolidated, statewide effort to inform the public can better address sea level adaptation measures that are needed to address many, if not all, of the resources addressed in the vulnerability assessment.*

**3--\*\*Signs warning of sea level rise (Transportation)** *Create and erect signs in areas that are already being affected by sea level rise, as well as in areas that may experience the effects of sea level rise in the near future, to help make sea level rise a reality for many people. Putting signs along roads that are regularly flooded at high tide and on, or near, lands that are being, or are going to be, flooded by sea level rise will help warn and educate people who are in that area. Signs would be similar to those farmers put up warning local residents of their farming activities.*

##### **a. Survey Comments**

- i. Put warnings on Google Maps!

- ii. 3 or 4 100-year weather events in 2 years aren't enough?

## **Expand funding opportunities for adaptation planning and implementation projects:**

### **1--\*\*Modify the Hotel Accommodations Tax to increase funds (Coastal Defenses, Land Preservation and Habitat, Industrial)**

*From Coastal Defenses: The Hotel Accommodations Tax should include short term rentals, but exclude military and university/college rentals. There are more hotel rooms in New Castle County which bring in approximately 52% of the funding from this tax, 38% comes from hotel rooms in Sussex County, and about 14% from Kent County. A business license would address enforcement issues associated with an increased hotel accommodation tax that would include short term rentals and would bring in additional revenue from license and penalty fees that could additionally be used for work in coastal areas. Only 1% of the money collected through this tax goes to sand replenishment projects in coastal areas. There needs to be a better understanding of where the other percentage of the money in the general fund is being used for and figure out if it can be better allocated to coastal needs. From Land Preservation and Habitat: Funding is identified as an important factor to collecting important data that will improve risk assessments, allow for mitigation projects if needed, and facilitate the implementation of innovative adaptive responses. Currently, this tax applies to hotel stays only. Taxing other rental properties may provide a dedicated funding source for sea level rise response actions. From Industrial: Funding is identified as an important factor to collecting important data that will improve risk assessments, allow for mitigation projects if needed, and facilitate the implementation of innovative adaptive responses. Currently, money generated from a lodging tax goes towards beach replenishment programs. In terms of the lodging tax, a bay beach can receive this funding only if it is part of a sand replenishment program. Perhaps a funding stream should be developed for sea level rise.*

#### **a. Survey Comments**

- i. There would be a lot of opposition to this, but it's worth looking at. A study should include levels of such taxation in surrounding states
- ii. The feasibility of this is currently being researched by DNREC, DEDO and Finance.
- iii. maybe apply to targeted or specific locations--not the entire state
- iv. Tax the tourists! Always popular with the locals...
- v. The affected interests need to become aware that a proposal is being considered to "raise their taxes". Could be very controversial

### **2. Revise Strategies for State Spending to allow State Revolving Fund (SRF) and other public funding to be allocated for projects in Level 4 areas. Create Revolving Loan Fund for adaptation responses (Water and Wastewater, Land Use)**

*From Water and Wastewater: At present the SRF cannot be used to fund projects in Level 4 areas without a demonstrated need to*

*protect public health. This creates a financial barrier to providing community systems or central sewer to residents and businesses with individual septic systems that may be vulnerable to sea level rise. As septic systems become compromised, allowing centralized sewer may prolong the need to relocate farther inland. There are mechanisms in place to prohibit encouraging future growth, such as restrictions on linking into pump stations in Level 4 areas; however, these restrictions must be enforced at the county level. From Land Use: There is not currently a designated source of funding for public or private sea level rise adaptation projects. A revolving fund would provide low interest loans for high priority projects.*

**a. Survey Comments**

- i. State government will have its hands full financially in adapting/retreating public infrastructure sites such as the Port, roads, and hospitals. Further, DNREC will be saddled with the cost of remediating or securing orphan HSCA and Brownfield sites. And the State is likely to face demands from residential property owners for financial assistance. Therefore, State government should NOT undertake to subsidize active privately owned industrial or commercial sites. If assistance is given to owners of residential properties, it should be in the form of loans rather than grants, except in provable cases of significant economic hardship. Further, the State should not subsidize any behavior that increases or fails to take into account SLR considerations for private sites subject to SLR effects, or that would tend to shift private cost burdens onto the public budget.
- ii. I really feel the emphasis has to be placed on projects. Show where the money is actually going and what is being achieved over time. I think the money should be targeted for Acquisitions, elevations, flood proofing and infrastructure protection projects.
- iii. The whole "Level 4" designation needs to be reviewed for its enforceability
- iv. Development projects in Level 4 areas?? What kind of projects exactly?
- v. looks like this one is really 2 unique suggestions
- vi. "Projects" is pretty open-ended. Doesn't sound good but wouldn't rule it out totally. Level 4 areas that are threatened should probably just be abandoned. Building sewer systems there would just increase investments and the concomitant reluctance to abandon property likely to be inundated.
- vii. those "certain criteria" are extremely conservative and seem to be applied arbitrarily. The Clean Water Advisory Council should be empowered to decide if it makes sense to direct funds to certain areas, and take it out of the hands of apparently biased agency technicians

**b. DCP Suggestions**

- i. Separate these into two recommendations.
- ii. Keep the suggestion for use of SRF Funds for adaptation responses.
- iii. Delete recommendation to allow SRF Funds in Level 4 as it can (and often is) already used when a public health need is demonstrated.

**3. Consider use of Regional Greenhouse Gas Initiative (RGGI) funds for adaptation actions**

**in industrial areas (Industrial)** *Funding is identified as an important factor to collecting data that will improve risk assessments, allow for mitigation projects if needed, and facilitate the implementation of innovative adaptive responses. RGGI funding was one pot of money identified as a potential funding resource*

**a. Survey Comments**

- i. RGGI is a declining revenue source and I believe close to being extended to its max capacity.
- ii. Not just industry-should be in all area
- iii. Note: For RGGI to be a useful funding source for coastal programs, it needs to be strengthened (caps lowered) to increase the market value of CO2 emission allowances

**6--Possible, broad funding sources: Total Maximum Daily Load funds, Cancer Settlement Funds, Hazardous Substance Cleanup Act funding, MAP-21, New Energy Bill (?)**

**(Industrial, Transportation)** *From Industrial: Funding is identified as an important factor to collecting important data that will improve risk assessments, allow for mitigation projects if needed, and facilitate the implementation of innovative adaptive responses. Total maximum daily loads are set for certain water bodies to set a limit on the amount of pollutants that can enter a water body while still maintaining water quality standards. With the risk of industrial facilities adding to the contaminants, TMDL funding may be appropriate to put towards adaptive responses for industries. It was suggested that cancer settlement funds could be put towards funding adaptive measures if a case was made that toxins could be spread in groundwater. HSCA funds are generated through a tax on wholesale gas/petroleum products and are directed towards cleaning up hazardous waste sites. From Transportation: Sea level rise can be presented under MAP-21 as a safety and security issue. There is an existing energy bill that allows for money to be spent on sea level rise avoidance. This bill, and associated funds, could aid in retreat efforts.*

**b. Survey Comments**

- i. Use of tobacco funds would not be appropriate; HSCA funds are set to sunset and are already over extended
- ii. It seems a stretch to try to tap some of these sources; others will also want their funds

**7--\*\*Increase funding availability for the Port of Wilmington (Industrial)** *All funds for operations and projects for the Port of Wilmington come from the bond bill. The Port may need to expand where they can get funds for adaptation to keep them viable. Borrowing money is not a viable option as they will still have to return it to make improvements.*

**c. Survey Comments**

- i. I just don't know much about this!



- ii. Extremely important. The Port is closed to visitors so public awareness of the issue is often based on speculation.
- iii. or alternative investors
- iv. Public infrastructure incl. Port of Wilmington: Begin developing adaptation/mitigation/retreat strategies NOW. Estimate the cost of various options and undertake a planning process designed to implement those strategies on a planned, rational basis with due consideration for environmental, social, and financial impacts. Where feasible, develop funding mechanisms based primarily on user fees rather than State appropriations.
- v. Privatization incentives should be included
- vi. Why?

### **Improve the Availability & Robustness of Sea Level Rise Data Sets:**

*All six focus groups discussed and made recommendations for improving the amount of data and information available for making decisions about adapting to sea level rise. Information useful for making decisions now is limited primarily to the statewide bathtub inundation model (DNREC, 2012 and available for viewing online <http://de.gov/slrmap>). While this model is useful for predicting long-term inundation from sea level rise on a large geographic scale, it does not provide a level of detail that would be required for site-specific or local decisions about adaptation, nor does it provide any information about groundwater or salinity impacts.*

**7--Create a Research and Policy Center at the University of Delaware that would focus on applied research for sea level rise and adaptation (Industrial)** *There are a variety of data gaps that could be filled to improve our understanding of sea level rise risks, and would therefore improve planning efforts. The group thought it may be helpful to incentivize university researchers to address these topics. Clear statements of research needs may improve academic's abilities to apply for and win grant money to take on such projects.*

#### **a. Survey Comments**

- i. May or may not be at UD - focus should be regional and there are a number of places already doing work on this (ideally would be a collaboration of multiple institutions)
- ii. evaluate not create
- iii. How would this be funded? Public funding should focus on meeting PUBLIC needs. But somebody should do it, and UD is probably as good as anybody... though why not make it a consortium of all DE colleges rather than playing favorites?
- iv. Research is already being done through the T2 Center at the UD. See Sue McNeil.
- v. other climate change impacts too
- vi. Again, can we do this?

## Provide technical assistance to partners for assessing vulnerability and choosing adaption strategies

All 5 recommendations in this section were well supported.

## Increase understanding of cost of adapting v. non-action (economic benefits, socio-economic)

1. **\*\*Secure adequate and permanent funding for the Delaware Bayshore Initiative; Conduct a cost benefit analysis through the Bayshore Initiative to justify use of funds (Land Preservation and Habitat, Coastal Defenses)***From Land Preservation and Habitat: The Delaware Bayshore Initiative is a major state and DNREC initiative without a dedicated funding source. From Coastal Defenses: Conduct a cost benefit analysis evaluating protection measures and return on investment from coastal sand projects and use the Initiative to protect areas with the most tourism, as well as areas that make Delaware unique, i.e., horseshoe people, birders, and hunters. Use information from UD's coastal economic analysis to understand the economic benefits of the coast to justify the need to address sea level rise. Use tourism information to justify the cost of adaptation.*
  - a. **Survey Comments**
    - i. Agree, but need better monitoring data before this can really thoroughly be analyzed
    - ii. You can make a CBA say whatever you want. And why the DBI? This is a somewhat limited program.
2. **Form a Committee to Investigate Risk Portfolio Issues resulting from sea level rise (Industrial)***To date, there has not been involvement in the Sea Level Rise Committee or Vulnerability Assessment from members of the financial community. Sea level rise scenarios may make investors less likely to make funding and/or insurance available to waterfront industries.*
  - a. **Survey Comments**
    - i. What does this mean?
    - ii. should be augmented to read, "...waterfront industries, businesses, developers and home owners."
3. **\*\*Abandon roads and redirect funding to recreation; funding options for retreat, coastal tax; identify and determine the feasibility of alternative funding mechanisms to offset costs of sea level rise adaptation responses (Land Preservation and Habitat, Transportation, Wastewater).***From Land Preservation and Habitat: Repeated maintenance of roads in areas increasingly flooded by the rising tides becomes cost-prohibitive. The state should consider abandoning roads in some areas where impact to residents and businesses are minimal.*

*Budgeted maintenance costs could then be redirected to provide recreational opportunities or support recreational facilities. From Transportation: Implement a coastal tax, classify some roads as "coastal roads," implement traffic metering, change the current capacity through increased use of transit, reduce the level of service to some roads over time, and discourage future development. Designate roads in areas that are to be affected by sea level rise as coastal roads. Designating these roads would change the amount of maintenance required leading to possible abandonment of the road. For new roads, include some type of consideration for avoidance of areas based on regulation due to the likelihood for flooding and inundation in that area. Enact a coastal tax to be used to fund retreat options, discourage future coastal development and to fund road maintenance in coastal areas. From Wastewater: Coastal user charge for instance, or funding sources that foster water quality improvement projects such as Estuary Programs or funding that can be used to protect recharge areas. Regional or statewide impact fee? Regional to discourage locations, statewide because all will be paying these costs in some way*

**a. Survey Comments**

- i. "Redirect funding" to ENVIRONMENTAL PROTECTION (esp. wetlands and aquatic habitats) and recreation.
- ii. DelDOT cannot support any redirection of Transportation Trust Fund dollars to non-transportation purposes. We do however agree with the several other points made about abandoning unmaintainable roads, developing public education programs, identifying new revenue sources, etc.
- iii. This needs much more work; very controversial ideas that could engender great opposition to any other SLR work

**b. DCP Suggestions**

- i. Coastal Road Classification covered in Regulatory Flexibility #1
- ii. Delete references to using Transportation funds for recreation
- iii. Discouraging future development in vulnerable areas covered by other recommendations
- iv. Pull out other individual ideas
  - 1. Wastewater User/Impact Charge in coastal areas or statewide
  - 2. Coastal Tax to fund retreat/Adaptation
  - 3. Reduce Level of Service for vulnerable roadways over time

- 4. Revise Strategies for State Spending to allow State Revolving Fund (SRF) and other public funding to be allocated for projects in Level 4 areas (Wastewater)***At present the SRF cannot be used to fund projects in Level 4 areas without a demonstrated need to protect public health. This creates a financial barrier to providing community systems or central sewer to residents and businesses with individual septic systems that may be vulnerable to sea level rise. As septic systems become compromised, allowing centralized sewer may prolong the need to relocate farther inland. There are mechanisms in place to prohibit encouraging future growth, such as restrictions on linking into pump stations in Level 4 areas; However, these restrictions must be enforced at the county level. This was a recommendation discussed during the focus group*

*meeting. In contrast however, SRF can apparently be used in level 4 areas IF certain criteria are met. For instance- as inserted above-if there is a demonstrated need to protect public health. Additional thoughts here from the group would be appreciated.*

- a. **STRIKE FROM THIS SECTION. This is repeated from Funding #2**

## **Additional Recommendations Received After the 11/2/12 SLRAC Meeting:**

**7--Conduct research to better understand human response to sea level rise and adaptation (added by DCP).** People are the core of any adaptation decision. Currently, there are few studies about coastal residents' opinions of adaptation actions, thresholds for action or likely emotional responses to flooding and inundation issues. A better understanding of coastal residents attitudes, perceptions and motivations could be very helpful in working with communities to choose adaptation options.

- a. **Survey Comments**

- i. All truth passes through three stages: First, it is ridiculed; Second, it is violently opposed; and Third, it is accepted as self-evident. -- Arthur Schopenhauer (1788-1860)
- ii. I think there is enough research out there-perhaps identifying existing research and utilizing it would be more effective